CLAIMS:

1. An encryption method for a digital transmission system, in which the digital data stream (x(t)) comprises an alternating sequence of training sequences or pilot carriers and data symbols (u), and the training sequence is transmitted in coded form, characterized in that the coding of the training sequence takes place with a dynamic encryption code (v_n).

2. An encryption method as claimed in claim 1, characterized in that the dynamic encryption code (v_n) is generated by a random generator.

3. An encryption method as claimed in claim 1 or 2, characterized in that the encryption method uses individual elements (v_n, v_{n+1} ...) in succession from a defined set (G_i) of encryption codes.

4. A method as claimed in claim 3, characterized in that the set (G_i) of dynamic training sequences (g_1, g_2) is implemented in the form of a loop, from the beginning to the end and then starting at the beginning again.

5. A decoding method for a digital data stream (x(t)), which is established by a scanner and comprises an alternating sequence of training sequences and data symbols (u), wherein the training sequences or pilot carriers are coded and, following scanning of the received digital data stream (x(t)), extracted from it and sent to a correlator, wherein a receiving-end decoding code (v_n) is also sent to the correlator, which, on the basis of the two signals, finds a maximum, which is used as the correcting variable for the time and frequency correction of the scanner, characterized in that the decoding code (v_n) is dynamic and a code generator generates the dynamic decoding code (v_n) as a function of an encryption key (200).

6. A decoding method as claimed in claim 5, characterized in that a permutation function (F_i) defines the content of a set of decoding codes (v_n).

7. A decoding method as claimed in claim 5 or claim 6, characterized by the following steps:

- transmitting of an encryption key (200) and thereby:
  - defining (210) a permutation function (F_i)
  - defining (220) a set of decoding codes (g_1, g_2, ... g_H)
  - defining (230) a hop interval (I_{hop}),

wherein the last three steps (210, 220, 230) may be performed in any order.

8. A decoding method as claimed in any one of claims 5 to 7, characterized by the implementation of a permutation procedure (400), comprising a loop with the following steps:

- set (410) an interval (n) to 1;
- wait (420) for the end of a predefined hop interval (I_{hop});
- increase (430) the interval (n) by the value of 1;
- undertake a comparison (440) of whether the current value of the interval (n) is greater than the total number (M) of elements in a permutation function (F_i), which indicates the positions of the dynamic codes (g_n) to be used for a decoding of the digital data stream (x(t)),

wherein, either the following takes place if the result of the comparison is positive:

- reset the interval (n) to a value of 1;

or, if the result of the comparison is negative:

- equate the current decoding function (v_n) with the decoding code (g_{p_n}) located at the position (p_n) specified by the permutation function (F_i).

9. An appliance for the synchronization of a receiver with a received digital data stream, wherein, for the implementation of the synchronization, training sequences or pilot carriers (v_n) are extracted from the received data stream and correlated with the decoding code, characterized in that the synchronization appliance is equipped with a dynamic code generator.

10. A synchronization appliance as claimed in claim 9, characterized in that it is equipped with means for storing an encryption key (200).

11. A digital transmission system with an appliance for the synchronization of a receiver with a received digital data stream, characterized in that the receiver is equipped with:

- means for extracting training sequences;
- means for determining a correcting variable for a scanner;
- means for generating a dynamic code.

12. A use of an encryption method and/or a decoding method, in which the digital data stream comprises an alternating sequence of training sequences or pilot carriers and data symbols, and the training sequence or the pilot carrier is dynamically coded, in wired or wireless networks.